

ADULT CORRECTIONS OFFICER
PHYSICAL TASKS TRAINING MANUAL

State of California, Board of Corrections
Standards and Training for Corrections Program

600 Bercut Drive
Sacramento, California 95814
(916) 445-5073

Shelley Montgomery
Standards Manager

Timothy Ryan
Exercise Physiologist

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Timothy Ryan, BA, MA, RCPT

Mr. Ryan holds a Master's Degree in Exercise Physiology from the San Diego State University. He is presently on staff as a clinical exercise physiologist at the Loma Linda University Medical Center's Cardiopulmonary Department. He has consulted to a variety of disciplines including professional sports teams, private companies, law enforcement and fire fighting agencies. From 1986-1992, Mr. Ryan contracted with the California Highway Patrol to organize and supervise their statewide medical screening program as part of their Physical Performance Program. He currently consults to the California Peace Officer Standards and Training Program, as well as local law enforcement agencies, on their physical training programs. Mr. Ryan provides consultation through his privately owned company, Health Evaluation Consultants.

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Physical Tasks Training Curriculum Development

Task Force Members

Jerry Gutierrez

Riverside Sheriff's Department

Renee Lowe

Los Angeles Sheriff's Department

Chris Ford

San Joaquin Sheriff's Department

John Copher

Fresno Sheriff's Department

Valerie Spinks

San Francisco Sheriff's Department

Ed Clites

Santa Rosa Training Center

Jaime Mendoza

Santa Ana Police Department

Kerry Bulls

Taft College (WESTEC)

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SECTION I: INTRODUCTION

Purpose and Scope of This Manual

The primary purpose of this **Physical Tasks Training Manual** is to present the core curriculum and design specifications for the portions of the Adult Corrections Officer Core Course that pertain to the performance of physically demanding tasks. This information is essential for training providers and instructors for the presentation of the Physical Tasks Unit (#22). It is also of significant benefit to local corrections departments in the selection and training of new adult corrections officers. Furthermore, candidates for the position may find the information in this manual of benefit as they prepare to apply for the corrections officer job. The manual is to be used in conjunction with the Adult Corrections Officer Core Training Course Manual, revised 2000.

Note: *This manual can be downloaded from the Board of Corrections web site: www.bdcorr.ca.gov.*

Goals of the Physical Tasks Training Curriculum

Unit #22 of the Adult Corrections Officer Core Course serves two major goals: Specifically it,

- 1) provides trainees instruction on physically demanding job tasks, an opportunity to practice techniques, and ways to improve their abilities to perform these tasks; and,
- 2) is a process to assess the trainee's current capability with regard to the performance of physically demanding job tasks.

While not the primary goal of the curriculum, the training affords trainees an opportunity to develop a personal routine that they can pursue on their own (after placement in the corrections officer position) to maintain and improve their ability to perform job-related physical tasks.

Job Relatedness

The curriculum addresses physical capabilities of major importance for performance of physically demanding adult corrections officer job tasks. The curriculum provides comprehensive coverage of all the major job-related physical capabilities for the majority of adult corrections officers statewide.

Four of the practical exercises are close simulations of actual corrections officer job tasks and serve as the program's assessment goal (i.e., they serve as tests as well as exercises). Benchmark minimum performance levels have been established for these four tests. These benchmark minimums are required levels. Most trainees will be able to exceed them, and should be encouraged to do so, just as they will be encouraged on the job to do more than simply meet minimum requirements.

Based on the tasks for the adult corrections officer position, as determined by the statewide job analysis study of corrections officers, these tests are job-related. The benchmark minimums on these tests correspond to minimum, on-the-job task performance standards that have verified statewide applicability for adult corrections officer positions. Therefore, these four designated tests and benchmark minimums are valid and meaningful tests of trainees' abilities to meet typical minimum physical requirements for the adult corrections officer job. The tests determine whether one can perform these important job tasks at a minimally acceptable level. Training providers who wish to issue a Core Course Completion certificate may only issue the certificate to those trainees who meet the statewide benchmarks on these four tests.

Physically Demanding Tasks

The 1999-2000 job analysis research that preceded the revision of this curriculum identified the following physically demanding tasks common to the majority (more than 50%) of adult corrections officers in the state.

- Pursue inmates on foot (running).
- Run to the scene of a disturbance or emergency.
- Carry heavy objects (for example, disabled or unconscious inmate or piece of equipment).
- Lift heavy objects (for example, disabled or unconscious inmate or piece of equipment).
- Drag heavy objects (for example, disabled or unconscious inmate or piece of equipment).
- Climb one or more flights of stairs.
- Run up one or more flights of stairs.
- Run down one or more flights of stairs.

While the training in Unit #22 assists in the overall preparation and basic skill ability to perform the following tasks, the specific techniques for performing these tasks are covered in other units of the training, mainly in Unit #8, Assaultive Behavior and Restraint Techniques and Unit #20, Emergency Procedures.

It is imperative that the physical tasks training instructors know the tasks and performance standards to which each test and benchmark minimum corresponds. The instructors must be able to explain the linkages to trainees and be prepared to answer trainees' questions about them. Also, if a trainee is having difficulty meeting the benchmark minimums, the instructor's ability to explain their direct connection with minimum job performance standards (to communicate their "real life" importance) will be critical to helping the trainee deal realistically with the problem.

Considerations for Employers – Agency Specific Needs

The benchmark minimums in the core course are translations of the typical minimum performance levels found to be applicable across the full range of agencies participating in the STC Program. Thus, by meeting the benchmark minimums, trainees demonstrate that they are able to meet typical statewide minimum performance requirements on physically demanding tasks.

Whether meeting the benchmark minimums in the core course also indicates a trainee's ability to meet a specific agency's local performance requirements depends on how that agency's local standards compare to the statewide performance requirements.

It is imperative that local agencies not confuse the benchmark minimums utilized in the statewide core course with the specific job requirements for their particular agency. It clearly would be inappropriate to terminate an employee based on standards that do not apply to the particular agency by which they have been hired. For example, if an agency has no facility with stairs, or does not require corrections officers to climb stairs in making their rounds or getting to the scene of an emergency, then the benchmark minimum for the Stair Walk Test would be difficult to defend as an absolute requirement for job entry with that particular agency.

In circumstances where the statewide performance requirements are the same as the local performance requirements and an individual trainee is unable to meet all the benchmark minimums, agencies should evaluate the situation on a case-by-case basis. A trainee should not be automatically disqualified from placement in the adult corrections officer position for failure to meet benchmark minimums. The determination of how to handle the situation is made by the employing agency. The evaluation might include such considerations as the following:

- Is additional practice likely to bring the employee's performance up to the benchmark minimum(s)? If so, and if additional practice time is administratively feasible, the employer may consider providing that opportunity.
- Is the employing agency obligated under applicable statutes and/or regulations to make reasonable accommodation for an adult corrections officer who may be unable to meet minimum performance standards on the particular task(s) associated with the benchmarks in question? The employer needs to consider the issue of accommodation on a case-by-case basis.

Testing Approach

There are four work simulation tests in the Physical Tasks Training Unit. These are as follows:

Behavior Skill Test #35: Complete a 50-yard sprint within 20 seconds.

Behavior Skill Test #36: Demonstrate ability to drag a 165 lb. weight (dummy) for a distance of 20 feet or more over a carpeted or flat, mowed grass surface within 30 seconds.

Behavior Skill Test #37: Demonstrate ability to walk a total distance of 75 feet (three 25-foot laps) within 30 seconds wearing a 30 pound airpack or weighted backpack.

Behavior Skill Test #38: On a flat course starting 15 yards back from a flight of stairs or bleacher steps, walk or jog the 15 yards, climb up 10 steps, then turn, climb back down the steps, and walk briskly or jog back to the starting point within 30 seconds.

These tests are to be evaluated on a pass/fail basis.

The testing portion of the curriculum in the core course provides, through the benchmark minimums, a post-hire standard that agencies may require their trainees to meet as a condition to placement in the permanent corrections officer position.

Medical Screening

A medical clearance should be required as a prerequisite to participation in the Physical Tasks Training Unit.

If the trainee has undergone a medical examination and the examining physician identified contraindicators to the trainee's participation in some portion of the training, find out what expectations the hiring agency has in terms of accommodation being made for the trainee.

Note: Sample Medical Screening Guidelines that describe the Physically Demanding Tasks of the adult corrections officer are available from the Board of Corrections.

Role of the Provider

In addition to the usual requirements of being a training provider that delivers an STC certified course, delivery of the physical tasks training demands specific areas of attention. For instance, the provider must arrange for appropriate facilities and equipment to support the physical tasks training. This includes adequate space, proper running and exercise surface, mats, water, stopwatches, display clocks, first aid and CPR equipment, cell phones or portable communication equipment (in case of injury off-site) and many other details necessary for a safe and effective training environment. Providers should not leave these details to the instructor as the provider may need to purchase additional equipment, arrange for their daily availability and proper maintenance. Further, the provider must develop appropriate safety guidelines for the physical tasks training and adequately brief staff and trainees on these guidelines.

Besides logistical support for training delivery, providers must assess the instructor-to-trainee ratio to make sure the trainees are receiving adequate supervision during the training and to allow enough time for the instructor to administer the work simulation tests. If necessary, providers should consult with STC to determine how best to incorporate appropriate staffing levels into the approved course budget.

Providers also need to work closely with their physical tasks training instructors to make sure the instructors are clear on the expectations and conditions of the training. Providers should insist that each physical tasks training instructor read this entire manual before developing their lesson plan and before instructing trainees.

The provider should take great care in selecting the physical tasks training instructor since there are many nuances to a successful delivery of this section of the core course and there is a risk of physical injury to the trainees. It is advisable to select instructors who have completed formal training in the area of physical skills performance. A listing of possible instructor training organizations is included in Appendix F.

The provider should also work closely with the instructors to ensure a positive learning environment for physical tasks training. The informal nature of physical tasks training may create a more relaxed atmosphere than a classroom setting. Providers should work with their instructors to make sure that professionalism is continued throughout all aspects of the course including the physical tasks training portion. (Please see the [Handbook on Presenting Core Courses](#), Issues in Course Delivery, Sexual Harassment and Inappropriate Comments by Instructors.)

The provider must also maintain a close communication link with the trainee's employing agency with regard to physical tasks training. This includes making sure proper medical screening has been conducted prior to training, expectations by the agency are clear to both the provider and the trainee, and regular feedback is provided to the employer with regard to the trainee's performance.

Within 30 days of course completion, the provider is responsible for submitting the results of the work simulation tests (as well as other course tests) to the employer. Tests results should be reported on the standardized STC test result report form for physical tasks (included in Appendix A). Each work simulation test is listed as a Behavior Skills Test and must be given a pass or fail grade. If the test was not administered, this must also be reported. In the case of a trainee who is unable to pass the work simulation tests, it is important that the provider report the results of the testing and not interpret or predict how the employer will handle the situation. Instructors should also be advised to refrain from interpretation as well.

Core course completion certificates may not be issued to any trainee who has not successfully completed the course and passed all the tests in the course.

Role of the Instructor

As the instructor of the physical tasks training unit, the instructor has two roles to serve, that of “coach” and that of “official observer” (monitor).

In the coaching role, the instructor:

- maximizes the trainees' individual abilities to handle the physical demands of the job;
- minimizes the potential for training-related injuries; and,
- teaches trainees methods they can pursue on their own (after placement in the corrections officer position) to continue to maintain and improve their job-related physical capabilities.

In the official observer role, the instructor:

- determines whether trainees can demonstrate the benchmark minimum performance standards for physically demanding job tasks;
- documents performance on the work simulation tests; and,
- monitors compliance with the provider's safety guidelines.

Role of the Trainee

Trainees are responsible for performing all practice sessions to improve their ability to perform job-related physical tasks to the best of their ability. They must practice within the provider's safety guidelines to ensure and safeguard their own medical wellness.

Trainees also may be asked to take responsibility for helping each other during the sessions, especially when they are rotating through sessions in small groups. This includes: being cooperative; timing each other on the exercises with time limits; giving each other feedback on how they are doing; and, being equitable in sharing equipment and facilities.

Role of the Employer

Prior to enrolling the trainee in the course, employers should conduct a medical screening by an examining physician who is familiar with the types of activities the trainee will be engaged in during the course.

The employing agency should make sure each trainee who participates in the core course has been given a proper orientation to the physical tasks training several weeks prior to course attendance. This includes advising the employee that exercise clothing and shoes will be required during the course as well as explaining the employer's expectations with regard to participation. Employers may find it helpful to provide each employee sections of the physical tasks training manual that pertain to the specific activities the trainee will be performing during the course.

Employers should make every effort to familiarize themselves with the provider's approach to physical tasks training. This might include an on-site visit to the course to observe the training. As with any aspect of the core course, employers should maintain regular and clear communication with the provider as to expectations and trainee performance while the course is in progress.

SECTION II: TESTING PROCEDURES

When to Test During Course

A trainee need only once demonstrate successful performance of the work simulation tests and benchmark minimums during the core course. After the instructor has observed the trainee successfully perform the tests, the instructor should focus on the improvement goal of the curriculum for that employee. Since most trainees will be able to successfully execute the tests early in the program, the instructor should be able to devote more attention to coaching and motivating performance improvement as the course progresses.

Any benchmark minimums that have not been met by the third week of the course should be viewed as a source of concern. The instructor should make special efforts to coach the trainee on the tasks in question, encourage the trainee to practice the tasks on his/her own time, and confer with the trainee's employing agency.

During the final week of training, and especially in the final two sessions, the top priority must be observation of trainees performing tasks on which they have not yet met the benchmark minimums. This approach to observation of trainee's performance ensures that all trainees will receive every possible opportunity to demonstrate and receive official credit for their ability to meet each benchmark minimum.

Tests as Discrete Activities

Each test is to be administered separately. When practicing or measuring performance on the four Behavior Skills Tests (dummy drag; 50 yard sprint; weighted carry; stair walk) each test should be a discrete activity with sufficient time for the trainee to rest between each test. Sufficient time should be approximately 2-3 minutes depending on circumstances.

Test Report Form

Report test results on the STC standardized form provided in Appendix A of this manual. Results are *pass*, *fail*, or *not administered* and must be reported as such. Test results are to be submitted to the Board of Corrections and to the employing agency 30 days after the completion of the course. If a trainee is not able to pass the Behavior Skills Tests in this unit, the provider should be in contact with the employing agency as soon as possible.

Remediation

If a trainee is having difficulty meeting the benchmark minimums, a plan for allowing additional practice and/or instruction on techniques should be developed. This plan might include extra time after the regular class hours if administratively feasible. Responsibility for any plan for remediation after the last day of the course should be developed by the employer.

Temporary Inability to Participate in the Physical Tasks Training

Occasionally, a trainee is unable to participate in physical tasks training due to a temporary injury or pregnancy. Note: There are twenty-eight (28) hours of Defensive Tactics training (spread out in four hourly increments over the length of the course) and eight (8) hours of Fire and Life Safety training in addition to the twenty-one (21) hours of this unit. Therefore, an agency should consider the practicality of sending a trainee to the core course unless the trainee is able to participate in the full range of activities. Employing agencies should consult with the Board of Corrections if trainees need to delay participation in core training until medically cleared and if this delay creates a compliance issue.

Benchmark Minimums

The training provider's role is to administer the four work simulations tests (Behavior Skills Tests #35 through #38) and to report the trainee's performance on the statewide minimum benchmarks. If a trainee is not medically cleared to perform the test(s), the provider should note *Not Administered* on the Test Report Form. Absent a medical exclusion, the provider should report test results as *Pass* or *Fail*.

The provider may not issue a core course completion certificate to trainees who do not successfully meet the statewide benchmark minimums. Further, the core course roster should indicate that the trainee did not satisfactorily complete the core course.

Even if local agencies in the state have different employment criteria than that reflected in the statewide standards (please see section on Considerations for Employers – Agency Specific Needs), training providers are still responsible for delivering the statewide core curriculum and reporting the test results according to statewide benchmark minimums. While a trainee might be acceptable to their current employer with different performance levels or job tasks than those reflected in the statewide course, it would be misleading to issue a core course completion certificate to a trainee who might then apply to another corrections agency. The subsequent employing agency might base their hiring decision on an erroneous assumption that possession of a core course completion certificate represented satisfactory performance on the statewide core specifications.

SECTION III. INSTRUCTIONAL GUIDELINES

Equipment and Facility Setup

Training facilities are likely to vary all the way from fully equipped gyms with a variety of aerobic and weight resistance modalities to only the bare essentials. In either case, significant improvement can be realized in the areas of strength, aerobic fitness, and flexibility with a properly designed program. Utilizing basic exercises on a consistent routine basis, whether using sophisticated equipment or one's own body weight, will achieve improvement. The exercises illustrated in this manual require only the use of dumbbells for the strength training and mats or grassy areas for the stretching exercises. Walking and jogging can be done almost anywhere that a proper course has been designed and safety issues have been considered and addressed. Typical basic equipment includes:

- Mats
- Dummies
- Hand held weights
- Stopwatch
- Large display clock
- Set of 10 step stairs
- Water
- Appropriate training shoes (trainee provided)

A sampling of equipment vendors is listed in Appendix F.

Safety Guidelines

Providers are responsible for developing site-specific safety guidelines for physical tasks training. Further, providers and/or instructors must adequately brief trainees on these guidelines. While not an all-inclusive list, areas of consideration should include the following:

Advice to Trainees:

- inform training staff of any injuries and/or excessive discomfort or difficulty performing the activities;
- wear appropriate training shoes such as running, walking or cross training shoes; and,
- consume adequate water to ensure proper hydration.

Logistical Considerations for Instructors:

- allow forty-eight hours between strength training exercises to allow muscles to repair and recuperate;
- schedule physical task training in the morning if heat and/or impaired air quality is a factor;
- provide adequate access to water; and,
- have in place a response plan for dealing with injuries and/or emergency medical attention.

Scheduling and Handling Groups

There are four major components of the physical tasks training curriculum:

- 1) initial assessment

- 2) stretching exercises to increase flexibility
- 3) strength training to improve muscle strength
- 4) aerobic training to improve cardiovascular performance

After the initial assessment, instructors may be able to roughly divide the trainees into two groups according to their strengths and weaknesses. One group may include strong trainees who could benefit from improvement in body composition and aerobic endurance; another group may include trainees who demonstrate cardiovascular fitness but could benefit from improvement in strength. (There may be a third group of trainees who would benefit from improvement in both areas.) If practical, it may be helpful to devote approximately two-thirds of class time to improvement of weak areas while using the remaining third of the class time to maintenance of strong areas.

The entire class can begin the light stretching and warm-up portion of the training session together followed by a moderate cardiovascular work-out. The majority of stretching exercises should follow the cardiovascular and weight training sessions since the focused muscles are warm and the likelihood of over-stretching and injury to a muscle is thereby reduced.

For those trainees who will strive to improve their cardiovascular endurance, two-thirds of the remaining session should include exercises such as running, jogging, walking, etc. For those trainees who will focus on improving strength, two-thirds of the training session should include strength training such as push-ups, abdominal crunches and free weight resistance exercises.

Please see the suggested exercises in Section V and in Appendix E.

SECTION IV. INSTRUCTIONAL OBJECTIVES

Orientation and Assessment

UNIT 22, Module 22.1: Instructional Time: 4 hours

22.1.1 Participate in an individual self-assessment evaluation comprised of the following:

- Timed 1.5 mile run or 1 mile walk
- Flexibility exercises (such as sit and reach) for hamstring and back
- Baseline number of push-ups
- Baseline number of sit-ups

No Test

22.1.2 Demonstrate self-monitoring techniques for use in an individual exercise program such as the following:

- Heart rate
- Perceived exertion

No Test

22.1.3 Identify major injuries that might disable a corrections officer, such as:

- Knee injuries
- Back injuries

No Test

22.1.4 Complete a 50-yard sprint within 20 seconds.

BST #35

22.1.5 Demonstrate ability to drag a 165 lb. weight (dummy) for a distance of 20 feet or more over a carpeted or flat, mowed grass surface within 30 seconds.

BST #36

22.1.6 Demonstrate ability to walk a total distance of 75 feet (three 25-foot laps) within 30 seconds wearing a 30 pound airpack or weighted backpack.

BST #37

22.1.7 On a flat course starting 15 yards back from a flight of stairs or bleacher steps, walk or jog the 15 yards, climb up 10 steps, then turn, climb back down the steps, and walk briskly or jog back to the starting point within 30 seconds.

BST #38

Techniques and Practice

UNIT 22, Module 22.2: Instructional Time: 17 hours

Note: Instructional time not to exceed 2 hours in any one day. Resistance training to be performed with at least forty-eight hours in-between sessions.

Practice dragging a 165 lb. weight (dummy) by the following techniques:

- Perform initial practice on 150 lb or lesser weight if assessment shows difficulty performing this task
- Grasp dummy by “wrists” or under the arms of the dummy
- Maintain a straight back
- Bend knees and position majority of weight bearing on the quadriceps
- Tilt face upwards to assist with keeping back straight
- Avoid ballistic movements (short bursts of movement)
- Practice using smooth movements
- Drag (versus lift) dummy

Practice walking 75 feet (three 25-foot laps) within 30 seconds wearing a 30 pound airpack or weighted backpack using the following techniques:

- Cinch weight closely against body to prevent weight swinging back and forth
- Practice with padded straps on backpack or equipment
- Maintain a smooth stride so weight does not jostle against body
- If using a weight inside a backpack, wrap weight in towels or other soft fabric to avoid sharp edges digging into trainee’s back

Practice running the 50 yard sprint using appropriate pacing.

Practice the stair climb using appropriate pacing.

SECTION V: DETAILED INSTRUCTIONS FOR PRACTICE SESSIONS

Note: Providers are responsible for a safe and effective delivery of physical tasks training based on the recommendations of qualified staff whom they select. The following is a suggested program developed by exercise physiologist Tim Ryan. Providers may vary the physical tasks training guidelines (but not the benchmark minimums) at their discretion consistent with the goals of the statewide core curriculum.

Stretching Exercises

The following stretching exercises should be included in each physical training session spending approximately one minute per exercise. It is important not to over-stretch during these stretching exercises preceding the aerobic and weight training sessions. A more aggressive stretch and hold sequence can be accomplished following the aerobic and weight training sessions when the muscles are warm and the likelihood of over-stretching and injury is at a minimum. Additional stretching exercises can be found in Appendix E targeted at specific muscle groups to improve flexibility.

1. Arms: Triceps
2. Arms: Biceps
3. Side Benders
4. Lower Leg: Gastroc
5. Upper Leg: Quadriceps
6. Flexors
7. Groin: Thigh Adductors
8. Hip Oblique
9. Hamstrings: Knee to Chest
10. Hamstrings: Leg Raise
11. Lower Back: Extensions/Gluteal
12. Neck Circles

STRETCHING EXERCISES

Arms - Triceps

Sample



Pull elbow behind head until stretch is felt. Repeat with other elbow and hold stretch for up to 15 seconds.

Arms - Biceps

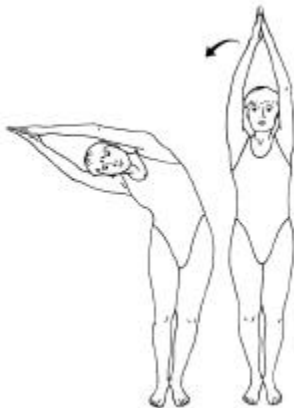
Sample



With arms straight and fingers interlaced, raise arms until stretch is felt and hold stretch for up to 15 seconds.

Side Benders

Sample



From starting position, bend the body to the side as far as possible until stretch is felt holding stretch for up to 15 seconds alternating sides.

Lower Leg - Gastroc

Sample



Keeping back straight with heel on floor and turned slightly outward, lean into wall until stretch is felt, holding stretch for up to 15 seconds alternating legs.

Upper Leg - Quadriceps

Sample








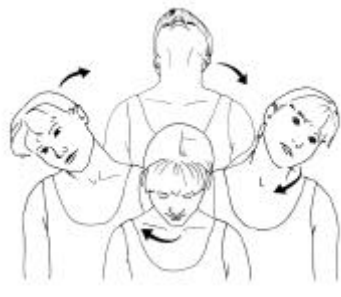
Pull heel toward buttocks until stretch is felt in front of leg, holding stretch for up to 15 seconds alternating legs.

Flexors

Sample



From position shown, slide foot back and move trunk forward until stretch is felt, holding for up to 15 seconds, alternating legs.

Groin - Thigh Adductors	Hip Oblique
<p style="text-align: center;">Sample</p>  <p>From beginning position, slide foot further to side until stretch is felt, holding stretch for up to 15 seconds alternating legs.</p>	<p style="text-align: center;">Sample</p>  <p>Clasp hands around knee and gently press knee toward opposite shoulder holding stretch for up to 15 seconds alternating legs. Feel stretch in buttocks and outside of hip.</p>
<p>Hamstring - Knee-to-Chest</p> <p style="text-align: center;">Sample</p>  <p>Gently pull knee to chest until stretch is felt holding for up to 15 seconds alternating legs.</p>	<p>Hamstrings - Leg Raise</p> <p style="text-align: center;">Sample</p>  <p>With hand behind knee, pull leg forward until stretch is felt holding for up to 15 seconds alternating legs. For more stretch, move hands up the leg toward ankle while moving head forward towards knee.</p>
<p>Lower Back - Extensions/Gluteal</p> <p style="text-align: center;">Sample</p>  <p>Bring knee to chest and hold for up to 15 seconds alternating knees. For more stretch, bring head to knee and hold stretch for up to 15 seconds.</p>	<p>Neck Circles</p> <p style="text-align: center;">Sample</p>  <p>From sitting position with back straight, slowly roll head in a full circle clockwise for up to 15 seconds and repeat motion counter clockwise.</p>

Strength Training Exercises

The following exercises are recommended to improve both upper and lower body strength. These exercises are designed for facilities that lack extensive strength training equipment and can be completed with a minimum of free weights. These exercises are targeted for those individuals experiencing difficulty passing the benchmark standards. The trainee should begin with light to moderate weight where 10-15 repetitions can be completed without undue strain. Two sets of each exercise should be completed. Additional exercises for strengthening specific muscle groups are located in Appendix E.

1. Arms: Standing Alternating Curl with dumbbells
2. Arms: Standing One-Arm Extension with dumbbells
3. Arms: Standing Curl with barbell
4. Chest: Standard Push-Up or Modified Push-Up
5. Chest: Bench Press with dumbbells
6. Arms: Standing Press with dumbbells
7. Arms: Seated Press with dumbbells
8. Legs: Squat
9. Legs: Lunge
10. Abs: Crunch
11. Abs: Bent Knee Sit-Ups

STRENGTH TRAINING EXERCISES

Arms - Standing Alternating Curl with Dumbbells

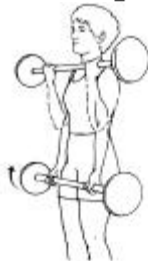
Sample



Keeping arms close to sides, curl one arm to shoulder and back to straight arm position. Alternate arms in a slow rhythmic manner.

Arms - Standing Curl with Barbell

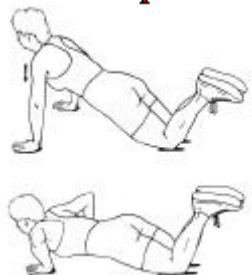
Sample



Keeping upper arms against sides, and with palms facing up, curl bar to under chin using a slow rhythmic pattern.

Modified Push-Up

Sample



From starting position with knees bent, hands placed outside shoulder width and body straight, lower body until chest touches floor and return to starting position.

Arms - Standing One-Arm Extension with Dumbbell

Sample



Using one arm to brace, rotate lower arm upward to straight arm position. Complete all repetitions with one arm then repeat with other arm using a slow rhythmic pace.

Chest - Standard Push-Up

Sample







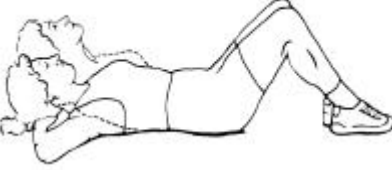

From starting position, place hands outside shoulder width and with body straight, slowly lower body until chest touches floor and return to upright position.

Chest - Bench Press with Dumbbells

Sample



From starting position with dumbbells at chest level, press to straight arm position and return to starting position in a slow rhythmic pattern to tolerance.

Arms - Standing Press with Dumbbells	Seated Press with Dumbbells
<p data-bbox="462 216 576 262">Sample</p>  <p data-bbox="235 573 803 695">With palms facing ears, press to straight arm position rotating palms to face forward at top of movement and return to starting position using a slow deliberate motion.</p>	<p data-bbox="1063 216 1177 262">Sample</p>  <p data-bbox="836 604 1388 695">Sitting with palms facing ears, press to straight arm position, rotating palms to face forward at top of movement returning to starting position.</p>
<p data-bbox="235 695 397 724">Legs - Squat</p> <p data-bbox="462 724 576 770">Sample</p>  <p data-bbox="235 1123 787 1245">Standing on board with back straight and head looking upward, bend knees until thighs are parallel to floor and push upright to starting position.</p>	<p data-bbox="836 695 1177 724">Legs - Lunge with Dumbbells</p> <p data-bbox="1063 724 1177 770">Sample</p>  <p data-bbox="836 1123 1388 1245">With legs shoulder-width apart, head up, and back straight, step forward, bending the leg until thigh is parallel to floor. Return to starting position alternating legs.</p>
<p data-bbox="235 1245 495 1274">Abdominals - Crunch</p> <p data-bbox="462 1274 576 1320">Sample</p>  <p data-bbox="235 1539 787 1652">Keeping head and neck in line with spine, elevate shoulders and upper back toward knees, keeping low and middle back in touch with floor at all times.</p>	<p data-bbox="836 1245 1209 1274">Abdominals - Bent Knee Sit-Up</p> <p data-bbox="1063 1274 1177 1320">Sample</p>  <p data-bbox="836 1570 1388 1652">Bending at waist, curl upper body toward knees crossing arms across chest.</p>

Aerobic Exercises

The cardiovascular portion of the exercise session is generally conducted in a walking, walk/jog, jogging, or running modality. The majority of training facilities will have access to a track or field where the cardiovascular portion of the exercise session can be administered.

Where facilities exist with additional indoor modalities such as stationary ergometers, cross county ski simulators, rowing machines, elliptical trainers, etc., additional cardiovascular workouts can be prescribed based on individual needs.

In some cases, a walking and stationary ergometer program may be more beneficial than a walking only program. Additionally, a non-weight bearing activity can be prescribed based on past history of injuries/surgeries or as an adjunct activity in combination with a weight bearing activity. Even in the case of trainees who may be excellent runners, a cross training approach may improve overall fitness to a greater degree than running only.

The instructors should attempt to guide trainees to individually monitor the intensity and duration of their cardiovascular exercise programs. Following initial assessment, trainees can be categorized into several small exercising groups utilizing a walking format for the less fit trainees and progressing through to more demanding running groups.

Following a 3-5 minute progressive warm-up each trainee should exercise at a training heart rate between 60-80% of intensity, depending on initial level of fitness. (Please see Appendix C, Calculation of Training Heart Rate.) Heart rate should be monitored 2-3 times during the cardiovascular segment maintaining target heart rate range. A large display clock centered in the exercise area will support the concept of the importance of maintaining a prescribed training intensity.

Eventually, heart rate monitoring can be reduced in frequency once a trainee adjusts to the appropriate training intensity based on judgment, experience and knowledge of the rating of perceived exertion scale. (Please see Appendix D, Rating of Perceived Exertion.) In general, a rating of perceived exertion of 13-15 (somewhat hard to hard) is suggested for the majority of trainees to maintain a training intensity of 60-80% of maximum.

The duration of exercise is dependent on the initial fitness level and history of exercise training prior to entrance to the core course. Generally, the group of trainees who have low cardiovascular fitness should attempt to complete 30-45 minutes of cardiovascular activity utilizing a combination of weight bearing and non-weight bearing activities to avoid lower extremity injuries.

SECTION VI: ON-GOING PLAN TO ENHANCE PHYSICAL ABILITIES

Once a trainee has successfully completed core training, continued improvement and maintenance of the ability to perform the physical tasks of the job are to be encouraged. To that end, instructors may wish to help trainees develop an individual plan prior to the end of the core course. Three major components are as follows:

- Individual Assessment
- Individual Plan
- Activity Tracking

Individual Assessment

Towards the completion of the course, trainees may re-assess their skills and may use their initial assessment as a check on their progress. The four self-assessment tests used in the course are a suitable way to gauge this progress. As a review, these are as follows:

- Cardiovascular: timed 1.5 mile run or 1 mile walk
- Flexibility: exercises (such as sit and reach) for hamstring and back
- Dynamic Strength: baseline number of push-ups
- Dynamic Strength: baseline number of sit-ups

Individual Plan

Using the information from the Individual Assessment above, trainees may develop a Personal Fitness Plan. Forms for this use are contained in Appendix A. The plan should address the following activities:

- Warm-up/flexibility
- Cardiovascular activity
- Muscular fitness activity
- Cool-down/flexibility

Activity Tracking

Once a plan has been developed, trainees may track their activities using a written check-off record or diary. A form for this use is contained in Appendix A. Studies indicate that maintaining an activity diary assists people in continuing their exercise program.

APPENDICES

APPENDIX A

FORMS

Adult Corrections Officer Physical Tasks Testing

Instructor Name: _____

Date Officially Observed to Meet/Exceed Benchmark Minimum Performance Level. Note: Only record as *Pass*, *Fail*, or *Not Administered*.

[illegible]

INDIVIDUAL PLAN

Name:	Date:
WARM-UP/FLEXIBILITY Describe your warm-up.	<hr/> <hr/> <hr/> <div>Sit and Reach Score: _____ Inches - Norm percentile = ____%</div>
CARDIOVASCULAR ACTIVITY Describe your aerobic activity including intensity, duration, frequency, type.	<hr/> <hr/> <hr/> <div>1.5 Mile Run Score: _____ Min. _____ Sec. - Norm percentile ____%</div> <div>1 Mile Walk Score: _____ Min. _____ Sec. – Rating = _____</div>
DYNAMIC STRENGTH ACTIVITY Describe your muscular fitness activity including frequency, sets and reps.	<hr/> <hr/> <hr/> <div>No. Sit-ups: _____ - Norm percentile = ____%</div> <div>No. Push-ups: _____ - Norm percentile = ____%</div>
COOL-DOWN/FLEXIBILITY Describe your cool-down	<hr/> <hr/> <hr/>

DAILY EXERCISE LOG

	RESTING HR BPM	FLEXIBILITY TIME	CARDIOVASCULAR TIME	STRENGTH TIME	EXERCISE HR BPM
MONDAY ____ DATE ____					
TUESDAY ____ DATE ____					
WEDNESDAY ____ DATE ____					
THURSDAY ____ DATE ____					
FRIDAY ____ DATE ____					
SATURDAY ____ DATE ____					
SUNDAY ____ DATE ____					

Note: Make copies of this form to keep a record of your exercise program. Studies indicate that maintaining an activity diary can assist you in continuing with your exercise program.

APPENDIX B
ASSESSMENT TABLES

CARDIORESPIRATORY FITNESS TESTS
Males

1.5 Mile Run					
%	Age 20-29	Age 30-39	Age 40-49	Age 50-59	Age 60+
99	7:29	7:11	7:42	8:44	9:30
95	8:13	8:44	9:30	10:40	11:20
90	9:09	9:30	10:16	11:18	12:20
85	9:45	10:16	11:18	12:20	13:22
80	10:16	10:47	11:44	12:51	13:53
75	10:42	11:18	11:49	13:22	14:24
70	10:47	11:34	12:34	13:45	14:53
65	11:18	11:49	12:51	14:03	15:19
60	11:41	12:20	13:14	14:24	15:29
55	11:49	12:38	13:22	14:40	15:55
50	12:18	12:51	13:53	14:55	16:07
45	12:20	13:22	14:08	15:08	16:27
40	12:51	13:36	14:29	15:26	16:43
35	13:06	13:53	14:47	15:53	16:58
30	13:22	14:08	14:56	15:57	17:14
25	13:53	14:24	15:26	16:23	17:32
20	14:13	14:52	15:41	16:43	18:00
15	14:24	15:20	15:57	16:58	18:31
10	15:10	15:52	16:28	17:29	19:15
5	16:12	16:27	17:23	18:31	20:04
1	17:48	18:00	18:51	19:36	20:57

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CARDIORESPIRATORY FITNESS TESTS
Females

1.5 Mile Run					
%	Age 20-29	Age 30-39	Age 40-49	Age 50-59	Age 60+
99	8:33	10:05	10:47	12:28	11:36
95	10:47	11:49	12:51	14:20	14:06
90	11:43	12:51	13:22	14:55	14:55
85	12:20	13:06	14:06	15:29	15:57
80	12:51	13:43	14:31	15:57	16:20
75	13:22	14:08	14:57	16:05	16:27
70	13:53	14:24	15:16	16:27	16:58
65	14:08	14:50	15:41	16:51	17:29
60	14:24	15:08	15:57	16:58	17:46
55	14:35	15:20	16:12	17:14	18:00
50	14:55	15:26	16:27	17:24	18:16
45	15:10	15:47	16:34	17:29	18:31
40	15:26	15:57	16:58	17:55	18:44
35	15:48	16:23	16:59	18:09	18:54
30	15:57	16:35	17:24	18:23	18:59
25	16:26	16:58	17:29	18:31	19:02
20	16:33	17:14	18:00	18:49	19:21
15	16:58	17:29	18:21	19:02	19:33
10	17:21	18:00	18:31	19:30	20:04
5	18:14	18:31	19:05	19:57	20:23
1	19:25	19:27	20:04	20:47	21:06

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ONE MILE WALK TEST

Test Administration: The purpose of this test is to estimate cardiovascular fitness level. A ¼ mile running track is ideal. Trainees are instructed to walk one mile **as fast as possible** and note their time. After completing the test, the trainee should continue walking slowly for 5 minutes to cool down.

Cardiovascular Fitness Rating For One Mile Walk

Rating	Men Under 40	Men Over 40	Women Under 40	Women Over 40
Excellent	13:00 or less	14:00 or less	13:30 or less	14:30 or less
Good	13:01 - 15:30	14:01 - 16:30	13:31 - 16:00	14:31 - 17:00
Average	15:31 - 18:00	16:31 - 19:00	16:01 - 18:30	17:01 - 19:30
Below Average	18:01 - 19:30	19:01 - 21:30	18:31 - 20:00	19:31 - 22:00
Low	19:31 or more	21:31 or more	20:01 or more	22:01 or more
First Test: Date: _____ Your Cardiovascular Rating (circle one): EXCELLENT GOOD AVERAGE BELOW AVERAGE LOW				
Second Test: Date: _____ Your Cardiovascular Rating (circle one): EXCELLENT GOOD AVERAGE BELOW AVERAGE LOW				

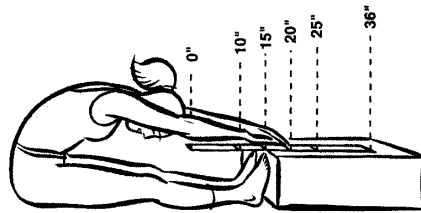
Reference: Walking Handbook, Susan Johnson, Ed.D., The Cooper Institute for Aerobics Research, 1997.

FLEXIBILITY MEASURE: SIT AND REACH TEST

Materials: Sit and Reach Box (see diagram below).

Procedures:

1. This test measures the flexibility of the muscles in the lower back and hamstrings.
2. Instruct participant to remove shoes.
3. Instructor demonstrates the procedure: (1) Legs are fully extended and the soles of the feet are placed flat against the Sit and Reach Box; (2) hands placed one on top of the other; (3) the arms are extended as far forward as possible in a smooth motion and held for a count of three (do not lurch forward - move slowly); (4) the point at the tip of the fingers is the indicator of flexibility.
4. Guard against the participant's knees bending by keeping a hand on the knees to detect movement.
5. Caution the participant against bouncing or jerking forward.
6. Three trials are given. Use best score for the indicator. See charts on the following pages for assessment.



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Box Specifications:

- 12 inches high with the yardstick taped to the top so that it extends 15 inches in front;
- or,

Use a step and add 15 inches to result. If unable to reach step, measure distance toward it and subtract 15 inches (e.g., if trainee misses step by 2 inches, result is 13 inches).

FLEXIBILITY
Sit and Reach

Males

	AGE					
%	<20	20-29	30-39	40-49	50-59	60+
99	>23.4	>23.0	>22.0	>21.3	>20.5	>20.0
95	23.4	23.0	22.0	21.3	20.5	20.0
90	22.6	21.8	21.0	20.0	19.0	19.0
85	22.4	21.0	20.0	19.3	18.3	18.0
80	21.7	20.5	19.5	18.5	17.5	17.3
75	21.4	20.0	19.0	18.0	17.0	16.5
70	20.7	19.5	18.5	17.5	16.5	15.5
65	19.8	19.0	18.0	17.0	16.0	15.0
60	19.0	18.5	17.5	16.3	15.5	14.5
55	18.7	18.0	17.0	16.0	15.0	14.0
50	18.0	17.5	16.5	15.3	14.5	13.5
45	17.3	17.0	16.0	15.0	14.0	13.0
40	16.5	16.5	15.5	14.3	13.3	12.5
35	16.0	16.0	15.0	14.0	12.5	12.0
30	15.5	15.5	14.5	13.3	12.0	11.3
25	14.1	15.0	13.8	12.5	11.2	10.5
20	13.2	14.4	13.0	12.0	10.5	10.0
15	11.9	13.5	12.0	11.0	9.7	9.0
10	10.5	12.3	11.0	10.0	8.5	8.0
5	9.4	10.5	9.3	8.3	7.0	5.8
1	<9.4	<10.5	<9.3	<8.3	<7.0	<5.8

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FLEXIBILITY
Sit and Reach

Females

	AGE					
%	<20	20-29	30-39	40-49	50-59	60+
99	>24.3	>24.5	>24.0	>22.8	>23.0	>23.0
95	24.3	24.5	24.0	22.8	23.0	23.0
90	24.3	23.8	22.5	21.5	21.5	21.8
85	22.5	23.0	22.0	21.3	21.0	19.5
80	22.5	22.5	21.5	20.5	20.3	19.0
75	22.3	22.0	21.0	20.0	20.0	18.0
70	22.0	21.5	20.5	19.8	19.3	17.5
65	21.8	21.0	20.3	19.1	19.0	17.5
60	21.5	20.5	20.0	19.0	18.5	17.0
55	21.3	20.3	19.5	18.5	18.0	17.0
50	21.0	20.0	19.0	18.0	17.9	16.4
45	20.5	19.5	18.5	18.0	17.0	16.1
40	20.5	19.3	18.3	17.3	16.8	15.5
35	20.0	19.0	17.8	17.0	16.0	15.2
30	19.5	18.3	17.3	16.5	15.5	14.4
25	19.0	17.8	16.8	16.0	15.3	13.6
20	18.5	17.0	16.5	15.0	14.8	13.0
15	17.8	16.4	15.5	14.0	14.0	11.5
10	14.5	15.4	14.4	13.0	13.0	11.5
5	14.5	14.1	12.0	10.5	12.3	9.2
1	<14.5	<14.1	<12.0	<10.5	<12.3	<9.2

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DYNAMIC STRENGTH: PUSH-UP TEST

A person who suffers from lower back ailments should not perform this test.

Materials: Gym mat

Procedures:

1. This test measures the dynamic strength and endurance of the arm, chest, and shoulder muscles.
2. Instructor demonstrates the correct technique.

Males: (1) Lie on stomach, legs together; (2) position hands under shoulders and pointing forward; (3) push up from the mat by fully straightening elbows and using toes as pivotal point; (4) keep upper body in a straight line, don't bend the back; (5) lower body to within two inches of the mat; neither stomach nor thighs should touch the mat.

Females: (1) Lie on stomach, legs together; (2) position hands under the shoulders and pointing forward; (3) push up from the mat by fully straightening elbows and using knees as pivotal point; (4) keep upper body in a straight line, don't bend the back; (5) lower body to starting position, chin touches the mat, the stomach should not touch the mat; (6) lower legs remain in contact with the mat, ankles straight (point toes).

3. Check for improper technique:

Males: (1) bending the back; (2) not lowering to within 2 inches of the ground.

Females: (1) bending the back; (2) not lowering chin to mat; (3) stomach touches the mat.

4. Perform as many push-ups in proper form as you can.
5. Record the number of properly executed push-ups on the assessment form.
6. Compare results to charts on following pages.

DYNAMIC STRENGTH
Push Up

Males

AGE

%	20-29	30-39	40-49	50-59	60+
99	100	86	64	51	39
95	62	52	40	39	28
90	57	46	36	30	26
85	51	41	34	28	24
80	47	39	30	25	23
75	44	36	29	24	22
70	41	34	26	21	21
65	39	31	25	20	20
60	37	30	24	19	18
55	35	29	22	17	16
50	33	27	21	15	15
45	31	25	19	14	12
40	29	24	18	13	10
35	27	21	16	11	9
30	26	20	15	10	8
25	24	19	13	9.5	7
20	22	17	11	9	6
15	19	15	10	7	5
10	18	13	9	6	4
5	13	9	5	3	2

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DYNAMIC STRENGTH
Full Body Push-Up

Females

AGE

%	20-29	30-39	40-49*
99	53.0	48.0	23.0
95	42.0	39.5	20.
90	37.0	33.0	18.0
85	33.0	26.0	17.0
80	28.0	23.0	15.0
75	27.0	19.0	15.0
70	24.0	18.0	14.0
65	23.0	16.0	13.0
60	21.0	15.0	13.0
55	19.0	14.0	11.0
50	18.0	14.0	11.0
45	17.0	13.0	10.0
40	15.0	11.0	9.0
35	14.0	10.0	8.0
30	13.0	9.0	7.0
25	11.0	9.0	7.0
20	10.0	8.0	6.0
15	9.0	6.5	5.0
10	8.0	6.0	4.0
5	6.0	4.0	1.0
1	3.0	1.0	0.0

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* Norms above age 49 not available.

DYNAMIC STRENGTH
Modified Push Up

Females

AGE

%	20-29	30-39	40-49	50-59	60+
99	70	56	60	31	20
95	45	39	33	28	20
90	42	36	28	25	17
85	39	33	26	23	15
80	36	31	24	21	15
75	34	29	21	20	15
70	32	28	20	19	14
65	31	26	19	18	13
60	30	24	18	17	12
55	29	23	17	15	12
50	26	21	15	13	8
45	25	20	14	13	6
40	23	19	13	12	5
35	22	17	11	10	4
30	20	15	10	9	3
25	19	14	9	8	2
20	17	11	6	6	2
15	15	9	4	4	1
10	12	8	2	1	0
5	9	4	1	0	0

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DYNAMIC STRENGTH: BENT-KNEE SIT-UPS

A person who suffers from lower back ailments should not perform this test.

Materials: Gym mat, timer, or stopwatch

Procedures:

1. This test measures the dynamic strength and endurance of the abdominal muscles.
2. The participant lies in a supine position, knees bent at a right angle, and feet shoulder width apart. The hands are placed at the side of the head with the fingers over the ears. The elbows are pointed toward the knees. The hands and elbows must be maintained in these positions for the entire duration of the test. Also, the ankles of the participant must be held throughout the test by the appraiser to ensure that the heels are in constant contact with the mat.
3. It is imperative that the participant is well instructed in the correct performance of the sit-up. The participant should be informed to initiate the sit-up by flattening the lower back followed by actively contracting the abdominal muscles and then continuing the movement with a well-controlled "curling up" of the trunk to the point where the elbows touch the knees. This is followed by a "curling down" of the trunk with particular emphasis on the lower back fully contacting the mat before the upper back and shoulders touch the mat.
4. A "rocking" or "bouncing" movement is not permitted. Also, the participant's buttocks must remain in contact with the mat and the fingers in contact with the side of the head at all times. Have the participant practice one or two repetitions to check for proper technique.
5. Advise the participant that incorrect repetitions, those not meeting the above criteria, will not be counted. The participant should also be advised to avoid breath-holding by breathing rhythmically and to "exhale on effort"; i.e., exhale during "curling-up" phase of the sit-up.
6. The participant is required to sit up, touch the knees with the elbows and return to the starting position (shoulders touch floor). **THE PARTICIPANT PERFORMS AS MANY SIT-UPS AS POSSIBLE WITHIN ONE MINUTE.** The participant may pause to rest whenever necessary.
7. When the participant is fully informed of the preceding details and is ready to start the sit-ups test, give the command, "Begin" and start the timer.
8. Compare results with the charts on the following pages.

DYNAMIC STRENGTH
1 Minute Sit Up

Males

	AGE					
%	<20	20-29	30-39	40-49	50-59	60+
99	>62.0	>55.0	>51.0	>47.0	>43.0	>39.0
95	62.0	55.0	51.0	47.0	43.0	39.0
90	55.0	52.0	48.0	43.0	39.0	35.0
85	53.0	49.0	45.0	40.0	36.0	31.0
80	51.0	47.0	43.0	39.0	35.0	30.0
75	50.0	46.0	42.0	37.0	33.0	28.0
70	48.0	45.0	41.0	36.0	31.0	26.0
65	48.0	44.0	40.0	35.0	30.0	24.0
60	47.0	42.0	39.0	34.0	28.0	22.0
55	46.0	41.0	37.0	32.0	27.0	21.0
50	45.0	40.0	36.0	31.0	26.0	20.0
45	42.0	39.0	36.0	30.0	25.0	19.0
40	41.0	38.0	35.0	29.0	24.0	19.0
35	39.0	37.0	33.0	28.0	22.0	18.0
30	38.0	35.0	32.0	27.0	21.0	17.0
25	37.0	35.0	31.0	26.0	20.0	16.0
20	36.0	33.0	30.0	24.0	19.0	15.0
15	34.0	32.0	28.0	22.0	17.0	13.0
10	33.0	30.0	26.0	22.0	15.0	10.0
5	27.0	27.0	23.0	17.0	12.0	7.0
1	<27.0	<27.0	<23.0	<17.0	<12.0	<7.0

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DYNAMIC STRENGTH
1 Minute Sit Up

Females

	AGE					
%	<20	20-29	30-39	40-49	50-59	60+
99	>55.0	>51.0	>42.0	>38.0	>30.0	>28.0
95	55.0	51.0	42.0	38.0	30.0	28.0
90	54.0	49.0	40.0	34.0	29.0	26.0
85	49.0	45.0	38.0	32.0	25.0	20.0
80	46.0	44.0	35.0	29.0	24.0	17.0
75	40.0	42.0	33.0	28.0	22.0	15.0
70	38.0	41.0	32.0	27.0	22.0	12.0
65	37.0	39.0	30.0	25.0	21.0	12.0
60	36.0	38.0	29.0	24.0	20.0	11.0
55	35.0	37.0	28.0	23.0	19.0	10.0
50	34.0	35.0	27.0	22.0	17.0	8.0
45	34.0	34.0	26.0	21.0	16.0	8.0
40	32.0	32.0	25.0	20.0	14.0	6.0
35	30.0	31.0	24.0	19.0	12.0	5.0
30	29.0	30.0	22.0	17.0	12.0	4.0
25	29.0	28.0	21.0	16.0	11.0	4.0
20	28.0	24.0	20.0	14.0	10.0	3.0
15	27.0	23.0	18.0	13.0	7.0	2.0
10	25.0	21.0	15.0	10.0	6.0	1.0
5	25.0	18.0	11.0	7.0	5.0	0.0
1	<25.0	<18.0	<11.0	<7.0	<5.0	0.0

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INDIVIDUAL SELF ASSESSMENT

DATE: _____

1. **FLEXIBILITY:** Sit and Reach Score: _____ Inches – Norm percentile = _____ %
2. **DYNAMIC STRENGTH:** No. Sit-ups: _____ - Norm percentile = _____ %
3. **DYNAMIC STRENGTH:** No. Push-ups: _____ - Norm percentile = _____ %
4. **CARDIOVASCULAR:** 1.5 Mile Run Score: _____ Min. _____ Sec. – Norm percentile = _____ %
 1 Mile Walk Score: _____ Min. _____ Sec. – Rating = _____

NOTES:

FLEXIBILITY
Sit and Reach

Males

AGE

%	<20	20-29	30-39	40-49	50-59	60+
99	>23.4	>23.0	>22.0	>21.3	>20.5	>20.0
95	23.4	23.0	22.0	21.3	20.5	20.0
90	22.6	21.8	21.0	20.0	19.0	19.0
85	22.4	21.0	20.0	19.3	18.3	18.0
80	21.7	20.5	19.5	18.5	17.5	17.3
75	21.4	20.0	19.0	18.0	17.0	16.5
70	20.7	19.5	18.5	17.5	16.5	15.5
65	19.8	19.0	18.0	17.0	16.0	15.0
60	19.0	18.5	17.5	16.3	15.5	14.5
55	18.7	18.0	17.0	16.0	15.0	14.0
50	18.0	17.5	16.5	15.3	14.5	13.5
45	17.3	17.0	16.0	15.0	14.0	13.0
40	16.5	16.5	15.5	14.3	13.3	12.5
35	16.0	16.0	15.0	14.0	12.5	12.0
30	15.5	15.5	14.5	13.3	12.0	11.3
25	14.1	15.0	13.8	12.5	11.2	10.5
20	13.2	14.4	13.0	12.0	10.5	10.0
15	11.9	13.5	12.0	11.0	9.7	9.0
10	10.5	12.3	11.0	10.0	8.5	8.0
5	9.4	10.5	9.3	8.3	7.0	5.8
1	<9.4	<10.5	<9.3	<8.3	<7.0	<5.8

FLEXIBILITY
Sit and Reach

Females

AGE

%	<20	20-29	30-39	40-49	50-59	60+
99	>24.3	>24.5	>24.0	>22.8	>23.0	>23.0
95	24.3	24.5	24.0	22.8	23.0	23.0
90	24.3	23.8	22.5	21.5	21.5	21.8
85	22.5	23.0	22.0	21.3	21.0	19.5
80	22.5	22.5	21.5	20.5	20.3	19.0
75	22.3	22.0	21.0	20.0	20.0	18.0
70	22.0	21.5	20.5	19.8	19.3	17.5
65	21.8	21.0	20.3	19.1	19.0	17.5
60	21.5	20.5	20.0	19.0	18.5	17.0
55	21.3	20.3	19.5	18.5	18.0	17.0
50	21.0	20.0	19.0	18.0	17.9	16.4
45	20.5	19.5	18.5	18.0	17.0	16.1
40	20.5	19.3	18.3	17.3	16.8	15.5
35	20.0	19.0	17.8	17.0	16.0	15.2
30	19.5	18.3	17.3	16.5	15.5	14.4
25	19.0	17.8	16.8	16.0	15.3	13.6
20	18.5	17.0	16.5	15.0	14.8	13.0
15	17.8	16.4	15.5	14.0	14.0	11.5
10	14.5	15.4	14.4	13.0	13.0	11.5
5	14.5	14.1	12.0	10.5	12.3	9.2
1	<14.5	<14.1	<12.0	<10.5	<12.3	<9.2

DYNAMIC STRENGTH: PUSH-UP TEST

A person who suffers from lower back ailments should not perform this test.

Materials: Gym mat

Procedures:

6. This test measures the dynamic strength and endurance of the arm, chest, and shoulder muscles.
7. Instructor demonstrates the correct technique.

Males: (1) Lie on stomach, legs together; (2) position hands under shoulders and pointing forward; (3) push up from the mat by fully straightening elbows and using toes as pivotal point; (4) keep upper body in a straight line, don't bend the back; (5) lower body to within two inches of the mat; neither stomach nor thighs should touch the mat.

Females: (1) Lie on stomach, legs together; (2) position hands under the shoulders and pointing forward; (3) push up from the mat by fully straightening elbows and using knees as pivotal point; (4) keep upper body in a straight line, don't bend the back; (5) lower body to starting position, chin touches the mat, the stomach should not touch the mat; (6) lower legs remain in contact with the mat, ankles straight (point toes).

8. Check for improper technique:

Males: (1) bending the back; (2) not lowering to within 2 inches of the ground.

Females: (1) bending the back; (2) not lowering chin to mat; (3) stomach touches the mat.

9. Perform as many push-ups in proper form as you can.
10. Record the number of properly executed push-ups on the assessment form.
6. Compare results to charts on following pages.

DYNAMIC STRENGTH
Push Up

Males

AGE

%	20-29	30-39	40-49	50-59	60+
99	100	86	64	51	39
95	62	52	40	39	28
90	57	46	36	30	26
85	51	41	34	28	24
80	47	39	30	25	23
75	44	36	29	24	22
70	41	34	26	21	21
65	39	31	25	20	20
60	37	30	24	19	18
55	35	29	22	17	16
50	33	27	21	15	15
45	31	25	19	14	12
40	29	24	18	13	10
35	27	21	16	11	9
30	26	20	15	10	8
25	24	19	13	9.5	7
20	22	17	11	9	6
15	19	15	10	7	5
10	18	13	9	6	4
5	13	9	5	3	2

DYNAMIC STRENGTH
Full Body Push-Up

Females

AGE

%	20-29	30-39	40-49*
99	53.0	48.0	23.0
95	42.0	39.5	20.
90	37.0	33.0	18.0
85	33.0	26.0	17.0
80	28.0	23.0	15.0
75	27.0	19.0	15.0
70	24.0	18.0	14.0
65	23.0	16.0	13.0
60	21.0	15.0	13.0
55	19.0	14.0	11.0
50	18.0	14.0	11.0
45	17.0	13.0	10.0
40	15.0	11.0	9.0
35	14.0	10.0	8.0
30	13.0	9.0	7.0
25	11.0	9.0	7.0
20	10.0	8.0	6.0
15	9.0	6.5	5.0
10	8.0	6.0	4.0
5	6.0	4.0	1.0
1	3.0	1.0	0.0

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* Norms above age 49 not available.

DYNAMIC STRENGTH
Modified Push Up

Females

AGE

%	20-29	30-39	40-49	50-59	60+
99	70	56	60	31	20
95	45	39	33	28	20
90	42	36	28	25	17
85	39	33	26	23	15
80	36	31	24	21	15
75	34	29	21	20	15
70	32	28	20	19	14
65	31	26	19	18	13
60	30	24	18	17	12
55	29	23	17	15	12
50	26	21	15	13	8
45	25	20	14	13	6
40	23	19	13	12	5
35	22	17	11	10	4
30	20	15	10	9	3
25	19	14	9	8	2
20	17	11	6	6	2
15	15	9	4	4	1
10	12	8	2	1	0
5	9	4	1	0	0

DYNAMIC STRENGTH: BENT-KNEE SIT-UPS

A person who suffers from lower back ailments should not perform this test.

Materials: Gym mat, timer, or stopwatch

Procedures:

1. This test measures the dynamic strength and endurance of the abdominal muscles.
2. The participant lies in a supine position, knees bent at a right angle, and feet shoulder width apart. The hands are placed at the side of the head with the fingers over the ears. The elbows are pointed toward the knees. The hands and elbows must be maintained in these positions for the entire duration of the test. Also, the ankles of the participant must be held throughout the test by the appraiser to ensure that the heels are in constant contact with the mat.
3. It is imperative that the participant is well instructed in the correct performance of the sit-up. The participant should be informed to initiate the sit-up by flattening the lower back followed by actively contracting the abdominal muscles and then continuing the movement with a well-controlled "curling up" of the trunk to the point where the elbows touch the knees. This is followed by a "curling down" of the trunk with particular emphasis on the lower back fully contacting the mat before the upper back and shoulders touch the mat.
4. A "rocking" or "bouncing" movement is not permitted. Also, the participant's buttocks must remain in contact with the mat and the fingers in contact with the side of the head at all times. Have the participant practice one or two repetitions to check for proper technique.
5. Advise the participant that incorrect repetitions, those not meeting the above criteria, will not be counted. The participant should also be advised to avoid breath-holding by breathing rhythmically and to "exhale on effort"; i.e., exhale during "curling-up" phase of the sit-up.
6. The participant is required to sit up, touch the knees with the elbows and return to the starting position (shoulders touch floor). THE PARTICIPANT PERFORMS AS MANY SIT-UPS AS POSSIBLE WITHIN ONE MINUTE. The participant may pause to rest whenever necessary.
7. When the participant is fully informed of the preceding details and is ready to start the sit-ups test, give the command, "Begin" and start the timer.
8. Compare results with the charts on the following pages.

DYNAMIC STRENGTH
1 Minute Sit Up

Males						
AGE						
%	<20	20-29	30-39	40-49	50-59	60+
99	>62.0	>55.0	>51.0	>47.0	>43.0	>39.0
95	62.0	55.0	51.0	47.0	43.0	39.0
90	55.0	52.0	48.0	43.0	39.0	35.0
85	53.0	49.0	45.0	40.0	36.0	31.0
80	51.0	47.0	43.0	39.0	35.0	30.0
75	50.0	46.0	42.0	37.0	33.0	28.0
70	48.0	45.0	41.0	36.0	31.0	26.0
65	48.0	44.0	40.0	35.0	30.0	24.0
60	47.0	42.0	39.0	34.0	28.0	22.0
55	46.0	41.0	37.0	32.0	27.0	21.0
50	45.0	40.0	36.0	31.0	26.0	20.0
45	42.0	39.0	36.0	30.0	25.0	19.0
40	41.0	38.0	35.0	29.0	24.0	19.0
35	39.0	37.0	33.0	28.0	22.0	18.0
30	38.0	35.0	32.0	27.0	21.0	17.0
25	37.0	35.0	31.0	26.0	20.0	16.0
20	36.0	33.0	30.0	24.0	19.0	15.0
15	34.0	32.0	28.0	22.0	17.0	13.0
10	33.0	30.0	26.0	22.0	15.0	10.0
5	27.0	27.0	23.0	17.0	12.0	7.0
1	<27.0	<27.0	<23.0	<17.0	<12.0	<7.0

DYNAMIC STRENGTH
1 Minute Sit Up

Females

	AGE					
%	<20	20-29	30-39	40-49	50-59	60+
99	>55.0	>51.0	>42.0	>38.0	>30.0	>28.0
95	55.0	51.0	42.0	38.0	30.0	28.0
90	54.0	49.0	40.0	34.0	29.0	26.0
85	49.0	45.0	38.0	32.0	25.0	20.0
80	46.0	44.0	35.0	29.0	24.0	17.0
75	40.0	42.0	33.0	28.0	22.0	15.0
70	38.0	41.0	32.0	27.0	22.0	12.0
65	37.0	39.0	30.0	25.0	21.0	12.0
60	36.0	38.0	29.0	24.0	20.0	11.0
55	35.0	37.0	28.0	23.0	19.0	10.0
50	34.0	35.0	27.0	22.0	17.0	8.0
45	34.0	34.0	26.0	21.0	16.0	8.0
40	32.0	32.0	25.0	20.0	14.0	6.0
35	30.0	31.0	24.0	19.0	12.0	5.0
30	29.0	30.0	22.0	17.0	12.0	4.0
25	29.0	28.0	21.0	16.0	11.0	4.0
20	28.0	24.0	20.0	14.0	10.0	3.0
15	27.0	23.0	18.0	13.0	7.0	2.0
10	25.0	21.0	15.0	10.0	6.0	1.0
5	25.0	18.0	11.0	7.0	5.0	0.0
1	<25.0	<18.0	<11.0	<7.0	<5.0	0.0

INDIVIDUAL SELF ASSESSMENT

DATE: _____

1. **FLEXIBILITY:** Sit and Reach Score: _____ Inches – Norm percentile = _____ %

2. **DYNAMIC STRENGTH:** No. Sit-ups: _____ - Norm percentile = _____ %

3. **DYNAMIC STRENGTH:** No. Push-ups: _____ - Norm percentile = _____ %

4. **CARDIOVASCULAR:** 1.5 Mile Run Score: _____ Min. _____ Sec. – Norm percentile = _____ %
1 Mile Walk Score: _____ Min. _____ Sec. – Rating = _____

NOTES:

APPENDIX C

CALCULATION OF TRAINING HEART RATE RANGE

CALCULATION OF TRAINING HEART RATE RANGE

In general, heart rate is the best indicator of exertion. Since it is measured easily, it can be used to establish appropriate exercise intensity. It is customary to calculate a range, with both lower and upper endpoints, where training is likely to be most beneficial. If an individual consistently trains below a certain level, e.g., 60% of capacity, gains will be minimal (insufficient overload). On the other hand, training above a certain level, e.g., 80% of capacity, is difficult to sustain for an appropriate length of time and can lead to injuries.

Heart rate is usually expressed in beats per minute. It is impractical, however, to use this "minute" rate for exercise. An accepted approach is to think in terms of a 10-second period. This is much more practical when applied during an exercise session, as measurement beyond 10 seconds can lead to erroneous estimation since the heart rate falls so rapidly once exercise is stopped.

Measurement of heart rate, at rest or during exercise, can be taken by palpating the radial (wrist) or carotid (neck) artery. (Do not palpate both carotid arteries at the same time.) It is important to teach program participants how to measure their own heart rate, both at rest and during exercise sessions. This should be a tool that they use in their own personal fitness programs.

The heart rate should be measured after a "steady state" is reached, e.g., after at least 5 minutes of aerobic activity such as running. Once it is measured, the heart rate measure provides feedback in terms of exercise intensity. If the measured heart rate is below the calculated lower end of the training heart rate range, then the participant knows to pick up the pace. If it is above the upper end, the participant should slow down.

Measurement of actual training heart rate should be performed as follows:

- while still exercising, find the pulse in the wrist;
- stop briefly and begin counting the pulse for a 10 second time period (a timepiece is required). Note: It is important to begin counting as soon as possible after stopping since the pulse begins to fall immediately;
- the first count is actually "zero", not "one";
- count 0, 1, 2, 3 and so on for the 10-second period; then,
- calculate the training heart rate range as shown on the following page.

CALCULATION:

The calculated training heart rate range, which serves as a guide, is determined as follows:

- Step 1: Calculate your estimated maximum heart rate by subtracting your age from 220.
- Step 2: Subtract your resting heart rate.
- Step 3: Multiply this number by the lower conditioning intensity (60%)
- Step 4: Add your resting heart rate.
- Step 5: Divide by 6 to get your 10-second value (to be used during exercise).
- Step 6: Repeat steps 3-5 using upper conditioning intensity (80%)

EXAMPLE: For a 40-year-old with a resting heart rate of 70 beats per minute.

To find the lower end (60% of capacity) of the training heart rate range:

Step 1:	220	-	40 years	=	180
Step 2:	180	-	70	=	110
Step 3:	110	x	60%	=	66
Step 4:	66	+	70	=	136
Step 5:	136	÷	6	=	23 beats in 10 seconds

To find the upper end (80% of capacity) of the training heart rate range:

Step 3:	110	x	80%	=	88
Step 4:	88	+	70	=	158
Step 5:	158	÷	6	=	26 beats in 10 seconds

The training heart rate range for this person would be 23 to 26 beats in 10 seconds

APPENDIX D

RATING OF PERCEIVED EXERTION

RATING OF PERCEIVED EXERTION


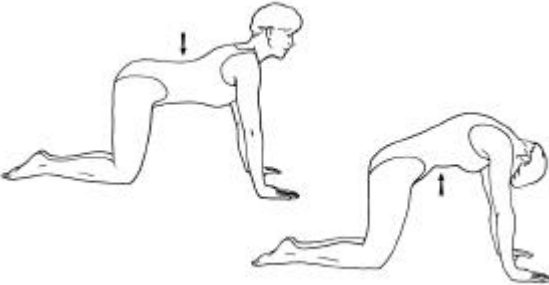




The Borg scale, Rating of Perceived Exertion (RPE), was introduced in 1970 and is based on a scale from 6 to 20 roughly based on heart rate at rest to maximal exercise i.e., 60 to 200 beats/min. Generally speaking, for the majority of individuals, exercise intensity should be maintained between an RPE of 11-15 (fairly light to hard) for the majority of the exercise session for maximal training stimulus. RPE can be adjusted up or down depending on individual levels of fitness and training goals.


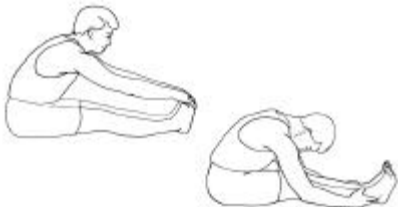

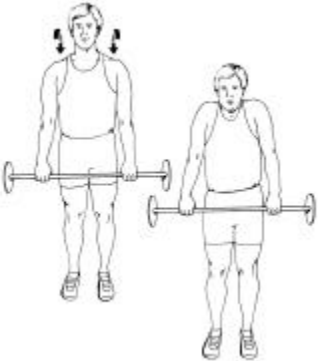


RATING	DESCRIPTION
6	
7	Very, very light
8	
9	Very light
10	
11	Fairly light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Very, very hard
20	

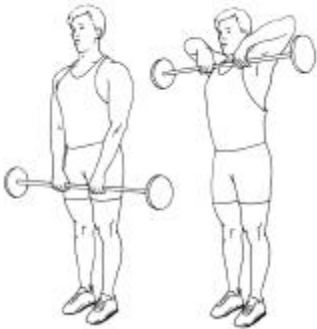





Note: From G.A.V. Borg, "Psychological Bases of Perceived Exertion," Medicine and Science in Sports and Exercise, 14(5), 377-381. American College of Sports Medicine, 1982.

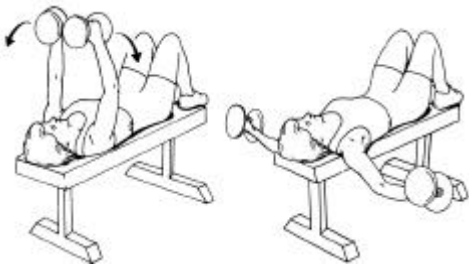


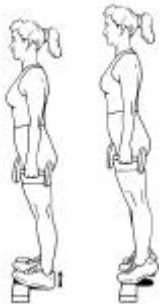


APPENDIX E
ADDITIONAL EXERCISES

ADDITIONAL EXERCISES

Posterior Deltoids/Rhomboids	Lower Back – Lumbar Extensors
<p>Sample</p>  <p>Raise slightly bent arms until parallel with floor and slowly return to starting position.</p> <p>Groin</p>	<p>Sample</p>  <p>From starting position, tuck chin and tighten stomach while arching back holding stretch for up to 15 seconds.</p> <p>Abdominals (Mild)</p>
<p>Sample</p>  <p>Grasping feet with hands and bending from hips, gently pull forward until stretch is felt, holding stretch for up to 15 seconds.</p> <p>Abdominals</p>	<p>Sample</p>  <p>With hands in small of back, arch back until stretch is felt holding stretch for up to 15 seconds.</p> <p>Extensors</p>
<p>Sample</p>  <p>Push upper torso back with arms until stretch is felt and hold stretch for up to 15 seconds tilting head back as far as comfortable.</p>	<p>Sample</p>  <p>From lying position, extend both hands and feet until stretch is felt holding for up to 15 seconds.</p>

<p>Lower Back – Extensors</p> <p>Sample</p>  <p>Bring both knees to chest and hold for up to 15 seconds alternating knees. For more stretch, bring head to knees and hold stretch for up to 15 seconds.</p>	<p>Hamstrings – Pull Back Toes, Double Leg</p> <p>Sample</p>  <p>With hands on toes, pull torso forward and bend head toward knees until stretch is felt holding stretch for up to 15 seconds. For more stretch, place hands on ankles bending forward with torso toward knees and holding stretch for up to 15 seconds.</p>
<p>Shoulder Shrug with Dumbbells</p> <p>Sample</p>  <p>Keeping arms straight, lift shoulders as high as possible, rotating shoulders up and backward.</p>	<p>Shoulder Shrug with Barbell</p> <p>Sample</p>  <p>Using a medium grip, keep arms straight and lift shoulders as high as possible, rotating shoulders up and backward and return to starting position.</p>
<p>Alternation Raise with Dumbbells</p> <p>Sample</p>  <p>With arm locked, raise dumbbell to overhead position. Return to starting position alternating arms in a slow rhythmic manner. Do not attempt too much weight.</p>	<p>Upright Row with Dumbbells</p> <p>Sample</p>  <p>Keeping dumbbells close together, pull dumbbells to chin, keeping elbows high and slowly return to starting position.</p>

Upright Row with Barbell	Back Extension with Barbell
<p style="text-align: center;">Sample</p>  <p>With close grip, pull bar up to chin keeping elbows high and return to starting position.</p>	<p style="text-align: center;">Sample</p>  <p>With knees slightly bent, bend at waist until upper body is parallel to floor, keeping head up and spine straight throughout movement. Progress from no barbell, to a barbell, finally adding light weight. Do not attempt with a history of back problems.</p>
Standard Grip Pull-Up	Bench Dip
<p style="text-align: center;">Sample</p>  <p>With medium grip, palms facing forward, pull body upward until chin touches and return to starting position.</p>	<p style="text-align: center;">Sample</p>  <p>Keeping elbows close to sides, lower body almost to floor and repeat to tolerance.</p>
Seated Lateral Raise with Dumbbells	Seated Rear Raise with Dumbbells
<p style="text-align: center;">Sample</p>  <p>With arms slightly bent, raise dumbbells to just above shoulder height and return to starting position using a slow rhythmic pace.</p>	<p style="text-align: center;">Sample</p>  <p>Raise slightly bent arms until parallel with floor and slowly return to starting position.</p>

<p>Bench Fly with Dumbbells</p> <p>Sample</p>  <p>From starting position with arms slightly bent, lower weight to shoulder level with palms facing upward and return to starting position using a slow rhythmic pace.</p>	<p>Prone Pullover with Dumbbell</p> <p>Sample</p>  <p>From starting position, keeping lower back flat on bench at all times and arms nearly straight, lower dumbbell behind head to tolerance and return to starting position using a slow rhythmic pace.</p>
<p>Wall Hug</p> <p>Sample</p>  <p>Keeping elbows close to sides, lower body almost to floor and repeat to tolerance.</p>	<p>Standing Heel Raise</p> <p>Sample</p>  <p>Standing on board with knees locked, rise up on toes as high as possible and return to starting position.</p>
<p>Side Bend</p> <p>Sample</p>  <p>With feet shoulder-width apart, bend sideways as far as possible, then return to straight back position. Complete all repetitions to one side, then repeat to other side.</p>	<p>Abdominal Curl</p> <p>Sample</p>  <p>Curl upper body toward knees until shoulder blades and upper back clear floor.</p>

APPENDIX F
EQUIPMENT VENDORS
AND
INSTRUCTOR TRAINING PROVIDERS

EQUIPMENT VENDOR INFORMATION – 165 LB. DUMMIES

Simulaids, Inc.
800-431-4310
PO Box 807
12 Dixon Avenue
Woodstock, NY 12498
www.simulaids.com

Dixie EMS Supply
800-347-3494
www.dixieems.com

Health Metrics, Inc.
509-628-0215
3602 Equestrian Drive
West Richland, WA 99353
www.healthmetrics-inc.com

INSTRUCTOR TRAINING PROVIDERS

American Council on Exercise (ACE)
5820 Oberlin Drive, Suite 102
San Diego, CA 92121-3787
800-825-3636

American College of Sports Medicine (ACSM)
PO Box 1440
Indianapolis, IN 46206-1440
800-486-5643

The Cooper Institute
12330 Preston Road
Dallas, TX 75230
800-635-7050
www.cooperinst.org

International Sports Sciences Association (ISSA)
1035 Santa Barbara Street, Suite 7
Santa Barbara, CA 93101
800-892-4772

National Strength and Conditioning Association (NSCA)
1640 "L" Street, Suite G
Lincoln, Nebraska 68508
888-746-2378

National Academy of Sports Medicine (NASM)
123 Hopencamp Drive, Suite 204
Thousand Oaks, CA 91360
800-656-2739

APPENDIX G

REFERENCES

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THE COOPER INSTITUTE
12330 Preston Road
Dallas, TX 75230
800-635-7050

VISUAL HEALTH ILLUSTRATIONS, INC.
PO Box 44646
Tacoma, WA 98444

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